

## Multisystemic Therapy (MST) for Youth with Serious Emotional Disturbance (SED)

### Program description:

This is an intensive family-focused treatment, which combines aspects of cognitive, behavioral, and family therapies. Therapists work in the child's home, school, and community to modify his/her environment. Although MST is often conducted with juvenile offenders, the studies included here focused on children with externalizing problems who were not involved with the juvenile justice system at the time of intervention.

Typical age of primary program participant: 14

Typical age of secondary program participant: N/A

### Meta-Analysis of Program Effects

Outcomes Measured	Primary or Second-ary Participant	No. of Effect Sizes	Unadjusted Effect Sizes (Random Effects Model)			Adjusted Effect Sizes and Standard Errors Used in the Benefit-Cost Analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Out-of-home placement	P	5	-0.71	0.24	0.00	-0.51	0.24	15	-0.51	0.24	17
Substance abuse	P	3	-0.08	0.12	0.51	-0.06	0.12	15	-0.06	0.12	25
Externalizing behavior symptoms	P	4	-0.24	0.10	0.02	-0.18	0.10	15	-0.22	0.10	16

### Benefit-Cost Summary

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2011). The economic discount rates and other relevant parameters are described in Technical Appendix 2.	Program Benefits					Costs	Summary Statistics			
	Partici-pants	Tax-payers	Other	Other Indirect	Total Benefit		Benefit to Cost Ratio	Return on Invest-ment	Benefits Minus Costs	Probability of a positive net present value
	\$1,640	\$2,885	\$1,451	\$1,467	\$7,443		\$1.14	2%	\$942	68%

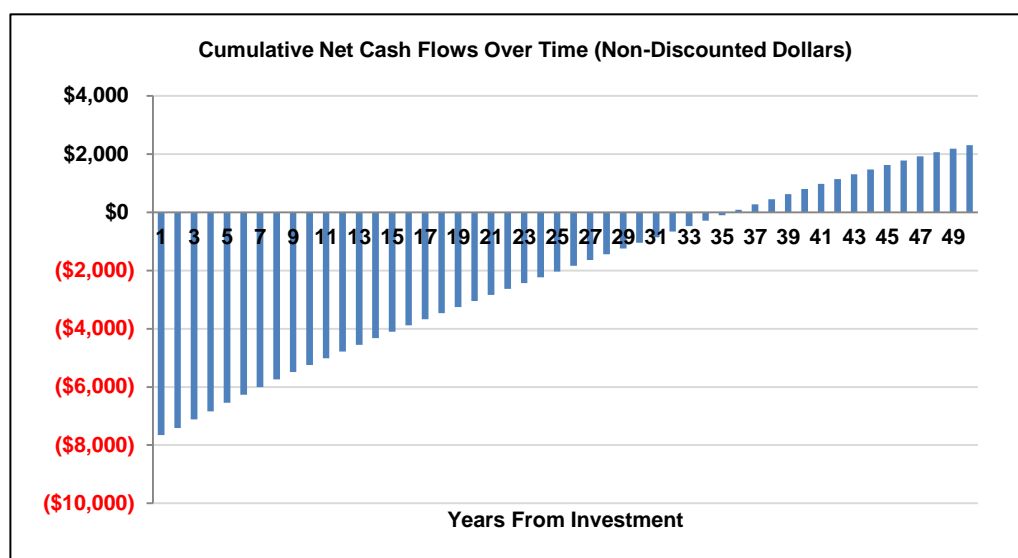
### Detailed Monetary Benefit Estimates

Source of Benefits	Benefits to:				
	Partici-pants	Tax-payers	Other	Other In-direct	Total Benefits
Crime	\$0	\$122	\$448	\$62	\$632
Earnings via high school graduation	\$1,302	\$479	\$0	\$244	\$2,026
Out-of-home placement	\$0	\$1,264	\$0	\$641	\$1,905
Health care costs for disruptive behavior symptoms	\$338	\$1,020	\$1,003	\$520	\$2,880

### Detailed Cost Estimates

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The uncertainty range is used in Monte Carlo risk analysis, described in Technical Appendix 2.	Program Costs			Comparison Costs			Summary Statistics	
	Annual Cost	Program Duration	Year Dollars	Annual Cost	Program Duration	Year Dollars	Present Value of Net Program Costs (in 2011 dollars)	Uncertainty (+ or - %)
	\$7,076	1	2008	\$850	1	2010	\$6,499	10%

Source: For estimation of MST, see: R. Barnoski (2009). Providing evidence-based programs with fidelity in Washington state juvenile courts: Cost analysis, Olympia: Washington State Institute for Public Policy, <http://www.wsipp.wa.gov/rptfiles/09-12-1201.pdf>.



### Multiplicative Adjustments Applied to the Meta-Analysis

Type of Adjustment	Multiplier
1- Less well-implemented comparison group or observational study, with some covariates.	1.00
2- Well-implemented comparison group design, often with many statistical controls.	1.00
3- Well-done observational study with many statistical controls (e.g., IV, regression discontinuity).	1.00
4- Random assignment, with some RA implementation issues.	1.00
5- Well-done random assignment study.	1.00
Program developer = researcher	0.64
Unusual (not "real world") setting	1.00
Weak measurement used	0.5

Adjustment factors were generated by examining studies for the treatment of children or adolescents with externalizing problems. Meta-regressions were conducted to test for the impact of different methodological factors on unadjusted effect size. Because research design rating and unusual setting were not significant predictors of effect size, multipliers of 1.0 were assigned. A dummy variable representing involvement of a program developer in the research study was a statistically significant predictor ( $B = -.189$ ,  $p = .056$ ), indicating that such studies had significantly more negative (i.e., larger) effect sizes than studies in which the developer was not involved. This coefficient was used to determine the 0.64 discount. Finally, we coded as weak measures outcomes that were based solely on the report of individuals who were involved in the intervention (either delivered it, as in the case of teachers, or received it, such as parents in a parenting program). Due to concern that such measures might be biased in favor of the programs reviewed, we utilized the standard Institute multiplier (0.5).

### Studies Used in the Meta-Analysis

- Glisson, C., Schoenwald, S. K., Hemmelgarn, A., Green, P., Dukes, D., Armstrong, K. S., & Chapman, J. E. (2010). Randomized trial of MST and ARC in a two-level evidence-based treatment implementation strategy. *Journal of Consulting and Clinical Psychology*, 78(4), 537-550.
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- Sundell, K., Hansson, K., Lofholm, C. A., Olsson, T., Gustle, L. H., & Kadesjo, C. (2008). The transportability of multisystemic therapy to Sweden: Short-term results from a randomized trial of conduct-disordered youths. *Journal of Family Psychology*, 22(4), 550-560.
- Weiss, B., Han, S., Harris, V., Castron, T., Ngo, V. K., & Caron, A. (n.d.). *An independent evaluation of the MST treatment program*. Unpublished manuscript emailed to M. Miller by S. Henggeler on May 4, 2010.